

SEQUENCE LISTING

SEQUENCE LISTING

- (1) GENERAL INFORMATION:
 - (iii) NUMBER OF SEQUENCES: 23
- (2) INFORMATION FOR SEQ ID NO:1:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: bases
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: Synthetic DNA
 - (ix) FEATURE:
 - (A) NAME/KEY: *Taq* Pol I for
 - (B) LOCATION:
 - (D) OTHER INFORMATION: Used to amplify full-length *Taq* Pol I coding sequence.
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Taq Pol I forward

5'-gc gaattc atgaggggga tgctgcccct ctttgagccc-3'

- (2) INFORMATION FOR SEQ ID NO:2:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: bases
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: Synthetic DNA
 - (ix) FEATURE:
 - (A) NAME/KEY: *Taq* Pol I rev
 - (B) LOCATION:
 - (D) OTHER INFORMATION: Used to amplify full-length *Taq* Pol I coding sequence.
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Taq Pol I reverse

5'-gc gaattc accctccttgg cggagcgc cagtcctccc-3'

- (2) INFORMATION FOR SEQ ID NO:3:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: bases
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: Synthetic DNA
 - (ix) FEATURE:
 - (A) NAME/KEY: *Taq* Pol I_A293_trunk
 - (B) LOCATION:
 - (D) OTHER INFORMATION: used to amplify truncated form of *Taq* DNA pol I coding sequence
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Taq Pol I_A293_trunk

5'-aatccatgggccctggaggagc cccctggccccgc-3'

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: bases
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Synthetic DNA

(ix) FEATURE:

- (A) NAME/KEY: Taq Pol I_Ala643Cys_fwd
- (B) LOCATION:
- (D) OTHER INFORMATION: used to introduce cys mutation into Taq DNA pol I coding sequence.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Alanine 643 to Cysteine Replacement

Taq Pol I_Ala643Cys_fwd

5'-C CAC ACG GAG ACC tgc AGC TGG ATG TTC GGC G-3'

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: bases
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Synthetic DNA

(ix) FEATURE:

- (A) NAME/KEY: Taq Pol I_Ala643Cys_rev
- (B) LOCATION:
- (D) OTHER INFORMATION: used to introduce cys mutation into Taq DNA pol I coding sequence.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Taq Pol I_Ala643Cys_rev

5'-C GCC GAA CAT CCA CGA Gca GGT CTC CGT GTG G-3'

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: bases
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Synthetic DNA

(ix) FEATURE:

- (A) NAME/KEY: Taq Pol I_Phe647Cys_fwd
- (B) LOCATION:
- (D) OTHER INFORMATION: used to introduce cys mutation into Taq DNA pol I coding sequence.

00001752-070001

[illegible]

Taq Pol I Phe647Cys fwd

(2) INFORMATION FOR SEQ ID NO:7:

(A) LENGTH: 1119 bases

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ix) FEATURE:

(A) NAME/KEY: Taq Pol I Phe647Cys rev

(B) LOCATION:

(D) OTHER INFORMATION: pro used to introduce cys mutation into Tag DNA pol I coding sequence.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

5'-GGC CTC CCG GGG GAC GCC GcA CAT CCA CGT GGC GG-3'

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: bases

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Synthetic DNA

(ix) FEATURE:

(A) NAME/KEY: Tag Pol I_Val649Cys_fwd

(B) LOCATION:

(D) OTHER INFORMATION: used to introduce cys mutation into Tag DNA pol I coding sequence.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Taq Pol I Val649Cys fwd

5' -GCC AGC TGG ATG TTC GGC tgc CCC CGG GAG GCC GTG G-3'

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: bases

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Synthetic DNA

(ix) FEATURE:

(A) NAME/KEY: Taq Pol I_Val649Cys_rev

(B) LOCATION:

(D) OTHER INFORMATION: used to introduce cys mutation into *Taq* DNA pol I coding sequence.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Taq Pol I Val649Cys_rev

- ```
(2) INFORMATION FOR SEQ ID NO:10:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: bases
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear
 (ii) MOLECULE TYPE: Synthetic DNA
 (ix) FEATURE:
 (A) NAME/KEY: Tag Pol I_Glu652Cys_fwd
 (B) LOCATION:
 (D) OTHER INFORMATION: used to introduce cys
 mutation into Tag DNA pol I coding sequence.
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:
```

Taq Pol I Glu652Cys fwd

- ```
(2) INFORMATION FOR SEQ ID NO:11:
      (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: bases
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear
      (ii) MOLECULE TYPE: Synthetic DNA
      (ix) FEATURE:
            (A) NAME/KEY: Taq PolI_Glu652Cys_rev
            (B) LOCATION:
            (D) OTHER INFORMATION: used to introduce cys
                mutation into Taq DNA pol I coding sequence.
      (xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:
```

5'-GCG CAT CAG GGG GTC CAC GGC gca CCG GGG GAC GCC-3'

- (2) INFORMATION FOR SEQ ID NO:12:
- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: bases
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: Synthetic DNA
 - (ix) FEATURE:
 - (A) NAME/KEY: *Taq* Pol I Ala653Cys fwd

$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$	$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{y}} \right) = \frac{\partial L}{\partial y}$	$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{z}} \right) = \frac{\partial L}{\partial z}$	$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{\theta}} \right) = \frac{\partial L}{\partial \theta}$	$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{\phi}} \right) = \frac{\partial L}{\partial \phi}$	$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{\psi}} \right) = \frac{\partial L}{\partial \psi}$
---------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Taq Pol I_Ala653Cys_fwd

(2) INFORMATION FOR SEQ ID NO:13:

(A) LENGTH: bases

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ix) FEATURE:

(B) LOCATION:

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

5'-GCG CAT CAG GGG GTC CAC Gca CTC CCG GGG GAC GCC-3'

(i) SEQUENCE CHARACTERISTICS:

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ix) FEATURE:

(B) LOCATION:

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Taq Pol I Val1654Cys fwd

5'-GTC CCC CGG GAG GCC tgt GAC CCC CTG ATG CGC-3'

(i) SEQUENCE CHARACTERISTICS:

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Synthetic DNA

[illegible]

(B) LOCATION:

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

5' -GCG CAT CAG GGG GTC aca GGC CTC CCG GGG GAC-3'

(i) SEQUENCE CHARACTERISTICS:

(B) TYPE: nucleic acid

(D) TOPOLOGY: linear

(ix) FEATURE:

(2) 13345

(B) LOCATION:

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Taq Pol I D655C fwd

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: bases

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Synthetic DNA

(ix) FEATURE:

(A) NAME/KEY: *Taq* Pol I D655C rev

(B) LOCATION:

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

5'-CCG GCG CAT CAG GGG Gca CAC GGC CTC CCG GGG-3'

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: bases

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: Synthetic DNA
- (ix) FEATURE:
 - (A) NAME/KEY: *Taq* Pol I_Pro656Cys_fwd
 - (B) LOCATION:
 - (D) OTHER INFORMATION: used to introduce cys mutation into *Taq* DNA pol I coding sequence.
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Proline 656 to Cysteine Replacement

Taq Pol I_Pro656Cys_fwd

5'-CGG GAG GCC GTG GAC tgc CTG ATG CGC CGG GCG-3'

- (2) INFORMATION FOR SEQ ID NO:19:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: bases
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: Synthetic DNA
 - (ix) FEATURE:
 - (A) NAME/KEY: *Taq* Pol I_Pro656Cys_rev
 - (B) LOCATION:
 - (D) OTHER INFORMATION: used to introduce cys mutation into *Taq* DNA pol I coding sequence.
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Taq Pol I_Pro656Cys_rev

5'-CGC CCG GCG CAT CAG Gca GTC CAC GGC CTC CCG-3'

- (2) INFORMATION FOR SEQ ID NO:20:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: bases
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: Synthetic DNA
 - (ix) FEATURE:
 - (A) NAME/KEY: *Taq* Pol I_Leu657Cys_fwd
 - (B) LOCATION:
 - (D) OTHER INFORMATION: used to introduce cys mutation into *Taq* DNA pol I coding sequence.
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Leucine 657 to Cysteine Replacement

Taq Pol I_Leu657Cys_fwd

5'-GCC GTG GAC CCC tgc ATG CGC CGG GCG GCC-3'

- (2) INFORMATION FOR SEQ ID NO:21:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: bases
 - (B) TYPE: nucleic acid

```
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: Synthetic DNA
(ix) FEATURE:
  (A) NAME/KEY: Taq Pol I_Leu657Cys_rev
  (B) LOCATION:
  (D) OTHER INFORMATION: used to introduce cys
  mutation into Taq DNA pol I coding sequence.
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:
```

Taq Pol I Leu657Cys rev

- ```
(2) INFORMATION FOR SEQ ID NO:22:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: bases
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear
 (ii) MOLECULE TYPE: Synthetic DNA
 (ix) FEATURE:
 (A) NAME/KEY: Tag Pol I_Met658Cys_fwd
 (B) LOCATION:
 (D) OTHER INFORMATION: used to introduce cys
 mutation into Tag DNA pol I coding sequence.
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:
```

Taq Pol I Met658Cys fwd

- ```
(2) INFORMATION FOR SEQ ID NO:23:
      (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: bases
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear
      (ii) MOLECULE TYPE: Synthetic DNA
      (ix) FEATURE:
            (A) NAME/KEY: Tag Pol I_Met658Cys_rev
            (B) LOCATION:
            (D) OTHER INFORMATION: used to introduce cys
                mutation into Tag DNA pol I coding sequence.
      (xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:
```

5'-GGC CGC CCG GCG aca CAG GGG GTC CAC GGC-3'

- (2) INFORMATION FOR SEQ ID NO:24:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: bases

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: Synthetic DNA
- (ix) FEATURE:
 - (A) NAME/KEY: *Taq* Pol I_Arg659Cys_fwd
 - (B) LOCATION:
 - (D) OTHER INFORMATION: used to introduce cys mutation into *Taq* DNA pol I coding sequence.
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Arginine 659 to Cysteine Replacement

Taq Pol I_Arg659Cys_fwd

5'-GCC GTG GAC CCC CTG ATG tGC CGG GCG GCC AAG ACC-3'

- (2) INFORMATION FOR SEQ ID NO:25:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: bases
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: Synthetic DNA
 - (ix) FEATURE:
 - (A) NAME/KEY: *Taq* Pol I_Arg659Cys_rev
 - (B) LOCATION:
 - (D) OTHER INFORMATION: used to introduce cys mutation into *Taq* DNA pol I coding sequence.
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Taq Pol I_Arg659Cys_rev

5'-GGT CTT GGC CGC CCG GcA CAT CAG GGG GTC CAC GGC-3'

- (2) INFORMATION FOR SEQ ID NO:26:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: bases
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: Synthetic DNA
 - (ix) FEATURE:
 - (A) NAME/KEY: *Taq* Pol I_Arg660Cys_fwd
 - (B) LOCATION:
 - (D) OTHER INFORMATION: used to introduce cys mutation into *Taq* DNA pol I coding sequence.
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Arginine 660 to Cysteine Replacement

Taq Pol I_Arg660Cys_fwd

5'-GAC CCC CTG ATG CGC tGc GCG GCC AAG ACC ATC-3'

- (2) INFORMATION FOR SEQ ID NO:27:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: bases
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear
(ii) MOLECULE TYPE: Synthetic DNA
(ix) FEATURE:
 (A) NAME/KEY: *Taq Pol I_Arg660Cys_rev*
 (B) LOCATION:
 (D) OTHER INFORMATION: used to introduce cys
 mutation into *Taq* DNA pol I coding sequence.
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Taq Pol I_Arg660Cys_rev

5'-GAT GGT CTT GGC CGC gCa GCG CAT CAG GGG GTC-3'

- (2) INFORMATION FOR SEQ ID NO:28:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: bases
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear
 (ii) MOLECULE TYPE: Synthetic DNA
 (ix) FEATURE:
 (A) NAME/KEY: *Taq Pol I_Ala661Cys_fwd*
 (B) LOCATION:
 (D) OTHER INFORMATION: used to introduce cys
 mutation into *Taq* DNA pol I coding sequence.
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Alanine 661 to Cysteine Replacement

Taq Pol I_Ala661Cys_fwd

5'-CCC CTG ATG CGC CGG tgc GCC AAG ACC ATC AAC-3'

- (2) INFORMATION FOR SEQ ID NO:29:
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: bases
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear
 (ii) MOLECULE TYPE: Synthetic DNA
 (ix) FEATURE:
 (A) NAME/KEY: *Taq Pol I_Ala661Cys_rev*
 (B) LOCATION:
 (D) OTHER INFORMATION: used to introduce cys
 mutation into *Taq* DNA pol I coding sequence.
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Taq Pol I_Ala661Cys_rev

5'-GTT GAT GGT CTT GGC gca CCG GCG CAT CAG GGG-3'

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH:
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY:

(ii) MOLECULE TYPE: polypeptide region of *Taq* DNA polymerase

(ix) FEATURE:

- (A) NAME/KEY:
- (B) LOCATION:
- (D) OTHER INFORMATION: polypeptide region of *Taq* DNA polymerase containing mutation for tag attachment.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Cys Ser Trp Met Phe Gly Val Pro Arg Glu Ala Val Asp Pro Leu Met
643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658
Arg Arg Ala
659 660 661

(2) INFORMATION FOR SEQ ID NO:31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH:
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY:

(ii) MOLECULE TYPE: polypeptide region of *Taq* DNA polymerase

(ix) FEATURE:

- (A) NAME/KEY:
- (B) LOCATION:
- (D) OTHER INFORMATION: polypeptide region of *Taq* DNA polymerase containing mutation for tag attachment.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

Ala Ser Trp Met Cys Gly Val Pro Arg Glu Ala Val Asp Pro Leu Met
643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658
Arg Arg Ala
659 660 661

(2) INFORMATION FOR SEQ ID NO:32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH:
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY:

(ii) MOLECULE TYPE: polypeptide region of *Taq* DNA polymerase

(ix) FEATURE:

(A) NAME/KEY:
(B) LOCATION:
(D) OTHER INFORMATION: polypeptide region of *Taq*
DNA polymerase containing mutation for tag
attachment.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Ala Ser Trp Met Phe Gly Cys Pro Arg Glu Ala Val Asp Pro Leu Met
643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658
Arg Arg Ala
659 660 661

(2) INFORMATION FOR SEQ ID NO:33:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH:
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY:

(ii) MOLECULE TYPE: polypeptide region of *Taq* DNA
polymerase

(ix) FEATURE:

(A) NAME/KEY:
(B) LOCATION:
(D) OTHER INFORMATION: polypeptide region of *Taq*
DNA polymerase containing mutation for tag
attachment.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

Ala Ser Trp Met Phe Gly Val Pro Arg Cys Ala Val Asp Pro Leu Met
643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658
Arg Arg Ala
659 660 661

(2) INFORMATION FOR SEQ ID NO:34:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH:
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY:

(ii) MOLECULE TYPE: polypeptide region of *Taq* DNA
polymerase

(ix) FEATURE:

(A) NAME/KEY:
(B) LOCATION:
(D) OTHER INFORMATION: polypeptide region of *Taq*
DNA polymerase containing mutation for tag
attachment.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Ala Ser Trp Met Phe Gly Val Pro Arg Glu Cys Val Asp Pro Leu Met
643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658

00001702.070001

Arg Arg Ala
659 660 661

(2) INFORMATION FOR SEQ ID NO:35:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH:
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY:

(ii) MOLECULE TYPE: polypeptide region of *Taq* DNA polymerase

(ix) FEATURE:

- (A) NAME/KEY:
- (B) LOCATION:
- (D) OTHER INFORMATION: polypeptide region of *Taq* DNA polymerase containing mutation for tag attachment.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

Ala Ser Trp Met Phe Gly Val Pro Arg Glu Ala Cys Asp Pro Leu Met
643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658
Arg Arg Ala
659 660 661

(2) INFORMATION FOR SEQ ID NO:36:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH:
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY:

(ii) MOLECULE TYPE: polypeptide region of *Taq* DNA polymerase

(ix) FEATURE:

- (A) NAME/KEY:
- (B) LOCATION:
- (D) OTHER INFORMATION: polypeptide region of *Taq* DNA polymerase containing mutation for tag attachment.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

Ala Ser Trp Met Phe Gly Val Pro Arg Glu Ala Val Cys Pro Leu Met
643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658
Arg Arg Ala
659 660 661

(2) INFORMATION FOR SEQ ID NO:37:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH:
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY:

- (ii) MOLECULE TYPE: polypeptide region of *Taq* DNA polymerase
- (ix) FEATURE:
- (A) NAME/KEY:
 - (B) LOCATION:
 - (D) OTHER INFORMATION: polypeptide region of *Taq* DNA polymerase containing mutation for tag attachment.
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

Ala Ser Trp Met Phe Gly Val Pro Arg Glu Ala Val Asp Cys Leu Met
643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658
Arg Arg Ala
659 660 661

- (2) INFORMATION FOR SEQ ID NO:38:
- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH:
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY:
- (ii) MOLECULE TYPE: polypeptide region of *Taq* DNA polymerase
- (ix) FEATURE:
- (A) NAME/KEY:
 - (B) LOCATION:
 - (D) OTHER INFORMATION: polypeptide region of *Taq* DNA polymerase containing mutation for tag attachment.
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

Ala Ser Trp Met Phe Gly Val Pro Arg Glu Ala Val Asp Pro Cys Met
643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658
Arg Arg Ala
659 660 661

- (2) INFORMATION FOR SEQ ID NO:39:
- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH:
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY:
- (ii) MOLECULE TYPE: polypeptide region of *Taq* DNA polymerase
- (ix) FEATURE:
- (A) NAME/KEY:
 - (B) LOCATION:
 - (D) OTHER INFORMATION: polypeptide region of *Taq* DNA polymerase containing mutation for tag attachment.
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

Ala Ser Trp Met Phe Gly Val Pro Arg Glu Ala Val Asp Pro Leu Cys
643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658
Arg Arg Ala
659 660 661

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH:
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY:

(ii) MOLECULE TYPE: polypeptide region of *Taq* DNA polymerase

(ix) FEATURE:

- (A) NAME/KEY:
- (B) LOCATION:
- (D) OTHER INFORMATION: polypeptide region of *Taq* DNA polymerase containing mutation for tag attachment.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Ala Ser Trp Met Phe Gly Val Pro Arg Glu Ala Val Asp Pro Leu Met
643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658
Cys Arg Ala
659 660 661

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH:
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY:

(ii) MOLECULE TYPE: polypeptide region of *Taq* DNA polymerase

(ix) FEATURE:

- (A) NAME/KEY:
- (B) LOCATION:
- (D) OTHER INFORMATION: polypeptide region of *Taq* DNA polymerase containing mutation for tag attachment.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

Ala Ser Trp Met Phe Gly Val Pro Arg Glu Ala Val Asp Pro Leu Met
643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658
Arg Cys Ala
659 660 661

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH:

- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY:
- (ii) MOLECULE TYPE: polypeptide region of *Taq* DNA polymerase
- (ix) FEATURE:
 - (A) NAME/KEY:
 - (B) LOCATION:
 - (D) OTHER INFORMATION: polypeptide region of *Taq* DNA polymerase containing mutation for tag attachment.
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

Ala Ser Trp Met Phe Gly Val Pro Arg Glu Ala Val Asp Pro Leu Met
 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658
 Arg Arg Cys
 659 660 661

- (2) INFORMATION FOR SEQ ID NO:43:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH:
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY:
 - (ii) MOLECULE TYPE: polypeptide region of *Taq* DNA polymerase
 - (ix) FEATURE:
 - (A) NAME/KEY:
 - (B) LOCATION:
 - (D) OTHER INFORMATION: polypeptide region of *Taq* DNA polymerase containing mutation for tag attachment.
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

Cys Thr Ser Ala Ala Val
 513 514 515 516 517 518

- (2) INFORMATION FOR SEQ ID NO:44:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH:
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY:
 - (ii) MOLECULE TYPE: polypeptide region of *Taq* DNA polymerase
 - (ix) FEATURE:
 - (A) NAME/KEY:
 - (B) LOCATION:
 - (D) OTHER INFORMATION: polypeptide region of *Taq* DNA polymerase containing mutation for tag attachment.

